

# **Appendix H**

## **Economic Impact Report**



# **Economic Impact of Western Greenbrier Co-Generation Facility**

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## ***Introduction***

This report summarizes the economic impact associated with the construction, demonstration phase, and operation of the proposed Western Greenbrier Co-Generation facility. The economic impact analysis and associated report were produced by Randall A. Childs. Randall is a principal of Community & Economic Development Consultants, Inc. (CEDCON) and works as an economist in the West Virginia University Bureau of Business and Economic Research. Randall has conducted numerous impact studies both through his work at WVU and CEDCON. These projects have included studies on power generation facilities, coal mines, the forest industry, the steel industry, The Greenbrier, housing, and travel and tourism, to name a few.

The proposed Western Greenbrier Co-Generation plant is a 92mw waste-coal fired generation plant. Preliminary design, permit applications, EIS, etc. began in 2004 and will be completed in 2005. The detailed design and construction will begin in 2006 and end in 2008. Startup and testing of the facility will take place in 2008, while the demonstration phase and preparation for full commercial operation will conclude in 2009 at which time full commercial operation of the plant will begin.

## ***Methodology***

The economic impact estimates provided in this report were estimated using data provided by Western Greenbrier Co-Generation, LLC on the expenditures during the construction, demonstration, and operational phases of the project, along with the IMPLAN economic impact model for the state of West Virginia. IMPLAN<sup>1</sup> is a widely accepted economic impact model that is used by consultants, universities, and government agencies across the country. The methodology used in this report provides conservative estimates of the economic impacts and, thus should be considered the lower bound of the true impacts. The realized impacts from the proposed facility may be more than the impacts estimated for this report.

## ***Economic Impacts***

### **Construction Phases**

The construction of the waste-coal fired generation plant will create the largest impact during the overall project, albeit a one-time impact that will take place during the construction phases of the project. The total impact of the construction of the facility on the West Virginia economy will be \$355.8 million in business volume or sales (Table 1).

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<sup>1</sup> IMPLAN is a product of Minnesota IMPLAN Group, Inc. Information about IMPLAN can be found at [www.implan.com](http://www.implan.com).

**Table 1**  
**Economic Impact of Construction of Western Greenbrier Co-Generation Plant**  
**West Virginia Economy**

Type of Impact	Direct Impact	Indirect and Induced Impact	Total Impact
Business Volume (Sales, \$millions)	284.0	71.8	355.8
Employment (Job-Years)	433	604	1,037
Employee Compensation (\$millions)	31.8	13.6	45.4
Assorted State Taxes	\$2,014,000	\$911,000	\$2,925,000

Notes: Employment is reported in job-years. 100 job-years is equivalent to 200 jobs for 6 months or 50 jobs for 2 years. Totals may not sum due to rounding. Assorted state taxes include consumer sales taxes, personal income taxes, corporate net income taxes, and business franchise taxes.

This increased economic activity will result in over 1000 job-years. Job-years is used for the construction impacts since construction activity spans several years. Employment will vary during the construction phases, but is expected to average 185 construction employees during the 27 months of the main construction. Businesses employing these construction workers will spend \$45.4 million in employee compensation during the construction of the facility. Direct employee compensation of the construction employees will be in excess of \$70,000 per employee. Assorted state taxes will be nearly \$3 million dollars.

There will also be additional impacts during the construction phases that are not captured in Table 1. These additional impacts are the result of expenditures in preparation for the operation of the facility. These additional expenditures will result in a \$7.6 million impact on the state economy.

## **Demonstration Phase**

The next phase of the project is the demonstration phase and is expected to begin in mid-2008 and conclude in 2009. The demonstration phase will generate \$27.0 million of business volume (sales/revenues) during the year long demonstration (Table 2). The resulting economic activity will generate 202 new jobs and \$8.0 million in employee compensation. The state will realize additional assorted state taxes of nearly one-half million dollars during the demonstration phase of the project.

**Table 2**  
**Economic Impact of Demonstration of Western Greenbrier Co-Generation Plant**  
**West Virginia Economy**

Type of Impact	Direct Impact	Indirect and Induced Impact	Total Impact
Business Volume (Sales, \$millions)	15.2	11.8	27.0
Employment (Jobs)	109	93	202
Employee Compensation (\$millions)	5.8	2.2	8.0
Assorted State Taxes	\$361,000	\$129,000	\$490,000

Notes: Employment is reported as annual average jobs. Totals may not sum due to rounding. Assorted state taxes include consumer sales taxes, personal income taxes, corporate net income taxes, and business franchise taxes.

## Full Commercial Operation

While the construction phases appear to generate the most significant impacts of the project, the continued operation of the facility will have the largest impact on the state. The impacts presented here, unlike the construction impacts, are annual impacts that occur each year that the facility is in operation.

The Western Greenbrier Co-Generation Plant is expected to employ 109 direct employees with annual employee compensation of more than \$54,000 per employee. The expenditures from the operation of the facility, the monies spent by the employees, and the resulting expenditures that occur in the economy through the multiplier effect will generate \$28.3 million in business volume each year. This will create 114 additional jobs in supporting industries for a total employment impact of 223 jobs. Businesses will spend \$8.2 million annually on employee compensation for these employees and the state will receive in excess of \$500,000 in assorted state taxes each year.

**Table 3**  
**Economic Impact of Operation of Western Greenbrier Co-Generation Plant**  
**West Virginia Economy**

Type of Impact	Direct Impact	Indirect and Induced Impact	Total Impact
Business Volume (Sales, \$millions)	16.0	12.3	28.3
Employment (Jobs)	109	114	223
Employee Compensation (\$millions)	5.9	2.3	8.2
Assorted State Taxes	\$370,000	\$134,000	\$504,000

Notes: Employment is reported as annual average jobs. Totals may not sum due to rounding. Assorted state taxes include consumer sales taxes, personal income taxes, corporate net income taxes, and business franchise taxes.



## Appendix A - Impact Definitions

Assorted State Taxes:	West Virginia state revenues from consumer sales tax, personal income tax, corporate net income tax, and business franchise tax.
Business Volume:	Sales plus net increase in finished inventories and the value of intra-corporate shipments. Equals output (see below) plus the cost of goods sold in retail and wholesale trade.
Employment:	The number of jobs in a business, industry, or region. Also the number of jobs attributable to an impact (see below). This is a measure of the number of full-time and part-time positions, not necessarily the number of employed persons. Annual average by place of work unless otherwise stated.
Employee Compensation:	Wages and salaries plus employers' contribution for social insurance (social security, unemployment insurance, workers compensation, etc.) and other labor income (pension contributions, health benefits, etc.). By place of work unless otherwise stated.
Impacts:	The results of the recirculation of funds throughout a regional economy due to the activity of a business, industry, or institution. Estimated by tracing back the flow of money through the initial businesses' employees and suppliers, the businesses selling to the employees and suppliers, and so on. Thus, they are a way to examine the distribution of industries and resources covered in the costs of the initial activity.
Output:	For most sectors, measured as sales plus net inventories and the value of intra-corporate shipments. For retail and wholesale trade, measured as gross margins (i.e. mark-ups on goods sold).

